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How Meditation Might Boost Your Test Scores

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Mindfulness meditation, the ancient and [flourishing practice](#) that increases awareness of random thoughts and redirects attention to the present moment, has been used to manage stress, depression and even chronic pain. But can it improve test scores?

Researchers in the department of psychological and brain sciences at the University of California, Santa Barbara, who have been studying the relationship between mindfulness and mind-wandering, or the tendency to let our minds drift away on “task-unrelated thoughts,” as it is referred to in academic literature, sought to find out.

“We had already found that mind-wandering underlies performance on a variety of tests, including working memory capacity and intelligence,” said Michael D. Mrazek, a graduate student working with [Jonathan W. Schooler](#), a professor of psychology at the university who studies the impacts and implications of mind-wandering and mindfulness. The higher the working memory, or an individual’s ability to keep in mind chunks of information and also use them, the better students tend to perform on reading comprehension tests.

Researchers disagree about the extent to which an individual’s working memory capacity can be enhanced. But in a [study published last month in the journal Psychological Science](#), the Santa Barbara researchers found that after a group of undergraduates went through a two-week intensive mindfulness training program, their mind-wandering decreased and their working memory capacity improved. They also performed better on a reading comprehension test — a section from the Graduate Record Examination, or G.R.E.

For the study, the researchers enrolled 48 University of California undergraduates in a study intended, they told them, to improve cognitive performance. Each student was evaluated for working memory capacity, mind-wandering and performance on a G.R.E. reading comprehension section.

Then, half the group was randomly assigned to take part in a nutrition program, in which they were educated about healthy eating and asked to keep a daily food diary.

The others took a training that resembled the standard mindfulness-based stress reduction program, which typically meets once a week for eight sessions. In the Santa Barbara regimen, students instead met four days a week for two weeks and were not required to devote as much formal practice outside of class.

But in the main, the class invoked the secular pillars of the practice, including sitting in an upright posture with legs crossed and gaze lowered, breathing exercises and “minimizing the distracting quality of past and future concerns by reframing them as mental projections occurring in the present.”

After two weeks, the students were re-evaluated for mind-wandering and working memory capacity and given another version of the G.R.E. reading comprehension section.

The nutrition group’s results did not change.

The group that took mindfulness training, however, mind-wandered less and performed better on tests of working memory capacity and reading comprehension. For example, before the training, their average G.R.E. verbal score was 460. Two weeks later, it was 520.

Richard J. Davidson, a professor of psychology and psychiatry at the University of Wisconsin-Madison, who has studied brain function in long-term and novice mindful meditators, offered this analogy: “You can improve the signal-to-noise ratio by reducing the noise. Decreasing mind-wandering is doing just that.”

Other professors of cognitive psychology thought the study was well done, although based on a small sample, with results that have yet to be replicated.

“A type of training that can help one avoid susceptibility to worries, or other sources of mind-wandering, very well could improve performance,” said Nelson Cowan, a professor at the University of Missouri who specializes in the study of working memory capacity and attention, in an e-mail message.

Daniel T. Willingham, a psychology professor at the University of Virginia and author of “When Can You Trust the Experts? How to Tell Good Science From Bad in Education,” said that “when you see these big effects, it may not be that you’ve really fundamentally changed how the mind works. But you have removed a stumbling block that was absorbing them.”

The Santa Barbara researchers have also recently worked with local high school students to see whether the results can be repeated using the SAT. But psychology professors like David Z. Hambrick of Michigan State University questioned how long the effects of a two-week training program would last.

Professor Davidson, who has studied Buddhist monks who have practiced meditation for 34,000 hours over the course of their lives, said, “If you have people who are out of shape and then do two weeks of physical exercise, you’ll see some benefit. But if they stop exercising, the benefits won’t persist.”